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CLAIMS

1. A process for preparing a supported catalyst or catalyst precursor containing carbon, said process
5 comprising:
- a. preparing a liquid mixture of (i) at least one catalyst support or catalyst support precursor; (ii) at least one metal-containing compound, wherein said metal is selected from V, Cr, Mn, Fe, Co, Ni, Cu, Mo and W, and (iii)
10 at least one polar organic compound which acts as a solvent for the metal-containing compound, said liquid mixture comprising 0 to 20 wt% of water based on the total weight of the mixture;
- b. converting said mixture to a paste or solid
15 residue; and
- c. combusting the residue in an oxygen-containing atmosphere to at least partially convert the organic compound to carbon and to form said supported catalyst or catalyst precursor.
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2. A process according to claim 1 wherein the polar organic compound is liquid at 20°C.
3. A process according to claim 1 wherein the polar
25 organic compound is solid at 20°C and the liquid mixture is formed by melting the polar organic compound.
4. A process according to any one of the preceding claims in which the liquid mixture comprises a solid catalyst
30 support and the metal-containing compound dissolved in the polar organic compound.

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5. A process according to any one of claims 1 to 3 wherein the catalyst support precursor is dissolved in said liquid mixture and forms the support during the heating and/or the combustion step.

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6. A process according to any one of the preceding claims wherein the liquid mixture comprises water.

7. A process for preparing a supported catalyst or catalyst precursor containing carbon, said process comprising:

15 a. preparing a mixture of (i) at least one porous catalyst support and (ii) at least one organic compound in a solvent, said mixture comprising 0 to 20 wt% of water based on the total weight of the mixture;

b. removing the solvent such that the organic compound is deposited in the pores of the catalyst support;

20 c. mixing the catalyst support with a solution of at least one metal-containing compound and removing the solvent to form a solid residue or kneading or mechanical mixing the catalyst support with at least one metal-containing compound, wherein said metal is selected from V, Cr, Mn, Fe, Co, Ni, Cu, Mo and W; and

25 d. combusting the resultant solid in an oxygen-containing atmosphere to at least partially convert the organic compound to carbon and to form said supported catalyst or catalyst precursor.

8. A process according to any one of the preceding claims, which further comprises incorporating a metal-containing promoter or modifier, wherein the metal is at least one of

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Zr, U, Ti, Th, Hf, Ce, La, Y, Mg, Ca, Si, Cs, Rb, Mo, W, Cr, Mg, rare earth metals and noble metals.

9. A process according to any one of the preceding claims
5 wherein the polar organic compound is an organic amine, amide, urea, an organic carboxylic acid, an alcohol, an amino acid, a heteroaromatic compound or a surfactant.

10. A process according to claim 9 wherein the polar
10 organic compound is urea, a citrate or citric acid.

11. A process according to any one of the preceding claims wherein the final catalyst or catalyst precursor support is an oxide, carbide, oxycarbide, zeolite, or boronnitride.

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12. A process according to any one of the preceding claims where the combustion is carried out for 15 minutes or less.

13. A process according to any one of the preceding claims
20 wherein the combustion is carried out in air.

14. A process according to any one of the preceding claims where the combustion is carried out at a temperature of from 150 to 1000°C.

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15. A process according to any one of the preceding claims where the catalyst or catalyst precursor before activation comprises carbon in an amount of up to 8 wt% based on the total weight of the catalyst or catalyst precursor.

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16. A process according to any one of the preceding claims wherein the catalyst or catalyst precursor is a Fischer-

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Tropsch synthesis, hydrotreating, hydrocarbon partial oxidation, steam reforming or carbon dioxide reforming catalyst or catalyst precursor.

- 5 17. A process for carrying out a Fischer-Tropsch synthesis, hydrotreating, hydrocarbon partial oxidation, steam reforming or carbon dioxide reforming reaction, which comprises catalysing said reaction with a catalyst prepared by a process as defined in claim 15.

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18. A Fischer-Tropsch synthesis catalyst or catalyst precursor comprising, on an inert support,

- i) 10 to 40 wt% cobalt, nickel or a mixture thereof;
 - ii) 1 to 10wt% at least one promoter selected from
15 zirconium, uranium, titanium, thorium, hafnium, cerium, lanthanum, yttrium, magnesium, calcium, strontium, cesium, rubidium, molybdenum, tungsten, chromium, manganese, and rare earth elements; and
 - iii) carbon in an amount of up to 8 wt%;
- 20 the above percentages being based on the total weight of the supported catalyst.

19. A steam reforming catalyst or catalyst precursor comprising, on an inert support,

- 25 i) 0.1 to 30 wt.% cobalt, nickel or a mixture thereof;
- ii) 0 to 10 wt.% of at least one promoter selected from sodium, potassium, uranium, titanium, thorium, hafnium, cerium, lanthanum, yttrium, magnesium, calcium, strontium, cesium, rubidium, molybdenum, tungsten, chromium, manganese
30 and rare earth elements; and
- iii) carbon in an amount of up to 4 wt.%;

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the above percentages being based on the total weight of the supported catalyst.